

AMENDMENTS TO THE CLAIMS

1-10. (Canceled)

11. (Currently Amended) A method comprising:

operating a low-power field emitter array (FEA) to generate at least one of a high electric field and a high electron flux;

exposing the low-power field emitter array (FEA) to at least one gas;

generating at least one radical species from the at least one gas exposed to the at least one of the high electric field and the high electron flux; and

reacting the at least one radical species with at least one ~~of a chemical toxin and a biological toxin~~.

12. (Original) The method of claim 11, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

13. (Original) The method of claim 11, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

14. (Original) The method of claim 11, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with voltages of no more than about 100 V.

15. (Original) The method of claim 11, wherein exposing the low-power field emitter array (FEA) to the at least one gas comprises exposing the low-power field emitter array (FEA) to molecular oxygen (O₂).

16. (Currently Amended) A method comprising:

operating a low-power field emitter array (FEA) with voltages of no more than about 1000 V to generate at least one of a high electric field and a high electron flux;

exposing the low-power field emitter array (FEA) to at least one gas;

generating at least one radical species from the at least one gas exposed to the at least one of the high electric field and the high electron flux; and

reacting the at least one radical species with at least one ~~of a chemical toxin and a biological~~ toxin.

17. (Original) The method of claim 16, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electric field having a field strength in a range of about 10⁷-10⁸ V/cm.

18. (Original) The method of claim 16, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

19. (Original) The method of claim 16, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with voltages of no more than about 100 V.

20. (Original) The method of claim 16, wherein exposing the low-power field emitter array (FEA) to the at least one gas comprises exposing the low-power field emitter array (FEA) to molecular oxygen (O₂).

21. (Currently Amended) A method comprising:
operating a low-power field emitter array (FEA) to generate at least one of a high electric field and a high electron flux;
exposing the low-power field emitter array (FEA) to at least one ~~of a chemical toxin and a biological toxin~~; and
dissociating the at least one ~~of the chemical toxin and the biological toxin~~ exposed to the at least one of the high electric field and the high electron flux.

22. (Original) The method of claim 21, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electric field having a field strength in a range of about 10⁷-10⁸ V/cm.

23. (Original) The method of claim 21, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

24. (Original) The method of claim 21, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with voltages of no more than about 100 V.

25. (Original) The method of claim 21, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with a cathode-to-gate distance of not more than about 1 micron (1 μ m).

26. (Currently Amended) A method comprising:

operating a low-power field emitter array (FEA) with voltages of no more than about 1000 V to generate at least one of a high electric field and a high electron flux;

exposing the low-power field emitter array (FEA) to at least one ~~of a chemical toxin and a biological toxin~~;

dissociating the at least one ~~of the chemical toxin and the biological toxin~~ exposed to the at least one of the high electric field and the high electron flux.

27. (Original) The method of claim 26, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

28. (Original) The method of claim 26, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

29. (Original) The method of claim 26, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with voltages of no more than about 100 V.

30. (Original) The method of claim 26, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with a cathode-to-gate distance of not more than about 1 micron (1μm).

31. (Currently Amended) A method comprising:

operating a low-power field emitter array (FEA) with gate openings in a range of about 1 micron (1 μm) to about 1 millimeter (1 mm) to generate at least one of a high electric field and a high electron flux;
exposing the low-power field emitter array (FEA) to at least one ~~of a chemical toxin and a biological toxin~~;
dissociating the at least one ~~of the chemical toxin and the biological toxin~~ exposed to the at least one of the high electric field and the high electron flux.

32. (Original) The method of claim 31, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

33. (Original) The method of claim 31, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

34. (Original) The method of claim 31, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with voltages of no more than about 100 V.

35. (Original) The method of claim 31, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with a cathode-to-gate distance in a range of about 1 micron (1 μ m) to about 1 millimeter (1 mm).

36. (Currently Amended) A method comprising:

operating a low-power field emitter array (FEA) with voltages of no more than

about 1000 V with gate openings in a range of about 1 micron (1 μ m) to

about 1 millimeter (1 mm) to generate at least one of a high electric field

and a high electron flux;

exposing the low-power field emitter array (FEA) to at least one of a chemical

~~toxin and a biological toxin~~; and

dissociating the at least one ~~of the chemical toxin and the biological toxin~~ exposed
to the at least one of the high electric field and the high electron flux.

37. (Original) The method of claim 36, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

38. (Original) The method of claim 36, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

39. (Original) The method of claim 36, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with voltages of no more than about 100 V.

40. (Original) The method of claim 36, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with a cathode-to-gate distance in a range of about 1 micron (1 μ m) to about 1 millimeter (1 mm).

41. (Currently Amended) A method comprising:
- operating a field emitter array (FEA) to generate at least one of a high electric field and a high electron flux;
- exposing the field emitter array (FEA) to at least one ~~of a chemical toxin and a biological toxin~~; and
- ionizing the at least one ~~of the chemical toxin and the biological toxin~~ exposed to the at least one of the high electric field and the high electron flux.
42. (Original) The method of claim 41, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.
43. (Original) The method of claim 41, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².
44. (Original) The method of claim 41, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) with voltages of no more than about 100 V.
45. (Original) The method of claim 41, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) with a cathode-to-gate distance of not more than about 1 micron (1 μ m).

46. (Currently Amended) A method comprising:
operating a field emitter array (FEA) with voltages of no more than about 1000 V
to generate at least one of a high electric field and a high electron flux;
exposing the field emitter array (FEA) to at least one ~~of a chemical toxin and a~~
~~biological toxin~~; and
ionizing the at least one ~~of the chemical toxin and the biological toxin~~ exposed to
the at least one of the high electric field and the high electron flux.

47. (Original) The method of claim 46, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

48. (Original) The method of claim 46, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

49. (Original) The method of claim 46, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) with voltages of no more than about 100 V.

50. (Original) The method of claim 46, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) with a cathode-to-gate distance of not more than about 1 micron (1 μ m).

51. (Currently Amended) A method comprising:

operating a field emitter array (FEA) with gate openings in a range of about

1 micron (1 μ m) to about 1 millimeter (1 mm) to generate at least one of a

high electric field and a high electron flux;

exposing the field emitter array (FEA) to at least one ~~of a chemical toxin and a~~

~~biological toxin~~; and

ionizing the at least one ~~of the chemical toxin and the biological toxin~~ exposed to

the at least one of the high electric field and the high electron flux.

52. (Original) The method of claim 51, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

53. (Original) The method of claim 51, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

54. (Original) The method of claim 51, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) with voltages of no more than about 100 V.

55. (Original) The method of claim 51, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) with a cathode-to-gate distance in a range of about 1 micron (1 μm) to about 1 millimeter (1 mm).

56. (Currently Amended) A method comprising:

operating a field emitter array (FEA) with voltages of no more than about 1000 V

with gate openings in a range of about 1 micron (1 μm) to about 1 millimeter (1 mm) to generate at least one of a high electric field and a high electron flux;

exposing the field emitter array (FEA) to at least one ~~of a chemical toxin and a biological toxin~~; and

ionizing the at least one ~~of the chemical toxin and the biological toxin~~ exposed to the at least one of the high electric field and the high electron flux.

57. (Original) The method of claim 56, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

58. (Original) The method of claim 56, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

59. (Original) The method of claim 56, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) with voltages of no more than about 100 V.

60. (Original) The method of claim 56, wherein operating the field emitter array (FEA) comprises operating the field emitter array (FEA) with a cathode-to-gate distance in a range of about 1 micron (1 μ m) to about 1 millimeter (1 mm).

61. (Previously Presented) A method comprising:

operating a low-power field emitter array (FEA) to generate at least one of a high electric field and a high electron flux;
exposing the low-power field emitter array (FEA) to at least one gas;
generating at least one radical species from the at least one gas exposed to the at least one of the high electric field and the high electron flux; and
reacting the at least one radical species with at least one of Sarin, Soman, arsine, germane, diborane, and a toxic chemical used in the production of at least one of ammonia (NH₃), chlorine (Cl₂), and an insecticide.

62. (Previously Presented) The method of claim 61, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

63. (Previously Presented) The method of claim 61, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

64. (Previously Presented) The method of claim 61, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with voltages of no more than about 100 V.

65. (Previously Presented) The method of claim 61, wherein exposing the low-power field emitter array (FEA) to the at least one gas comprises exposing the low-power field emitter array (FEA) to molecular oxygen (O₂).

66. (New) A method comprising:

operating a low-power field emitter array (FEA) to generate at least one of a high

electric field and a high electron flux;

exposing the low-power field emitter array (FEA) to at least one gas comprising

at least one of a pathogen and a toxin; and

rendering said at least one of the pathogen and the toxin harmless in response to exposure of said at least one of the pathogen and the toxin to the low-power field emitter array (FEA).

67. (New) The method of claim 66, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electric field having a field strength in a range of about 10^7 - 10^8 V/cm.

68. (New) The method of claim 66, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) to generate an electron flux in a range of about 0.5-2.0 Amp/cm².

69. (New) The method of claim 66, wherein operating the low-power field emitter array (FEA) comprises operating the low-power field emitter array (FEA) with voltages of no more than about 100 V.

70. (New) The method of claim 66, wherein exposing the low-power field emitter array (FEA) to the at least one gas comprises exposing the low-power field emitter array (FEA) to molecular oxygen (O₂).